

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/733,183

DATE: 03/12/2001

TIME: 14:33:19

Input Set : A:\09733183.txt

Output Set: N:\CRF3\03122001\I733183.raw

66 <211> ORGANISM: Viral

68 <400> SEQUENCE: 2

```

69 Ser Met Ser Tyr Thr Trp Thr Gly Ala Leu Val Thr Pro Lys Ala Ala
70      1      5      10      15
71 Glu Glu Gln Lys Leu Pro Ile Asn Ala Leu Ser Asn Ser Leu Leu Arg
72      20      25      30
73 His His Asn Leu Val Tyr Ser Thr Thr Ser Arg Ser Ala Cys Gln Arg
74      35      40      45
75 Gln Lys Lys Val Thr Phe Asp Arg Leu Gln Val Leu Asp Ser His Tyr
76      50      55      60
77 Gln Asp Val Leu Lys Glu Val Lys Ala Ala Ala Ser Lys Val Lys Ala
78      65      70      75      80
79 Asn Leu Leu Ser Val Glu Glu Ala Cys Ser Leu Thr Pro Pro His Ser
80      85      90      95
81 Ala Lys Ser Lys Phe Gly Tyr Gly Ala Lys Asp Val Arg Cys His Ala
82      100     105     110
83 Arg Lys Ala Val Ala His Ile Asn Ser Val Trp Lys Asp Leu Leu Glu
84      115     120     125
85 Asp Ser Val Thr Pro Ile Asp Thr Thr Ile Met Ala Lys Asn Glu Val
86      130     135     140
87 Phe Cys Val Gln Pro Glu Lys Gly Gly Arg Lys Pro Ala Arg Leu Ile
88      145     150     155     160
89 Val Phe Pro Asp Leu Gly Val Arg Val Cys Glu Lys Met Ala Leu Tyr
90      165     170     175
91 Asp Val Val Ser Lys Leu Pro Leu Ala Val Met Gly Ser Ser Tyr Gly
92      180     185     190
93 Phe Gln Tyr Ser Pro Gly Gln Arg Val Glu Phe Leu Val Gln Ala Trp
94      195     200     205
95 Lys Ser Lys Lys Thr Pro Met Gly Phe Ser Tyr Asp Thr Arg Cys Phe
96      210     215     220
97 Asp Ser Thr Val Thr Glu Ser Asp Ile Arg Thr Glu Glu Ala Ile Tyr
98      225     230     235     240
99 Gln Cys Cys Asp Leu Asp Pro Gln Ala Arg Val Ala Ile Lys Ser Leu
100     245     250     255
101 Thr Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Arg Gly Glu
102     260     265     270
103 Asn Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser
104     275     280     285
105 Cys Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala Arg Ala Ala Cys Arg
106     290     295     300
107 Ala Ala Gly Leu Gln Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu
108     305     310     315     320
109 Val Val Ile Cys Glu Ser Ala Gly Val Gln Glu Asp Ala Ala Ser Leu
110     325     330     335
111 Arg Ala Phe Thr Glu Ala Met Thr Arg Tyr Ser Ala Pro Pro Gly Asp
112     340     345     350
113 Pro Pro Gln Pro Glu Tyr Asp Leu Glu Leu Ile Thr Ser Cys Ser Ser
114     355     360     365
115 Asn Val Ser Val Ala His Asp Gly Ala Gly Lys Arg Val Tyr Tyr Leu

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116      171      175      180
117  Thr Arg Asp Pro Thr Thr Pro Leu Ala Arg Ala Ala Trp Glu Thr Ala
118      185      190      195      200
119  Arg His Thr Pro Val Asn Ser Trp Leu Gly Asn Ile Ile Met Phe Ala
120      205      210      215      220
121  Pro Thr Leu Trp Ala Arg Met Ile Leu Met Thr His Phe Phe Ser Val
122      225      230      235      240
123  Leu Ile Ala Arg Asp Gln Leu Gln Gln Ala Leu Asn Cys Glu Ile Tyr
124      245      250      255      260
125  Gly Ala Cys Tyr Ser Ile Glu Pro Leu Asp Leu Pro Pro Ile Ile Gln
126      265      270      275      280
127  Arg Leu His Gly Leu Ser Ala Phe Ser Leu His Ser Tyr Ser Pro Gly
128      285      290      295      300
129  Glu Ile Asn Arg Val Ala Ala Cys Leu Arg Lys Leu Gly Val Pro Pro
130      305      310      315      320
131  Leu Arg Ala Trp Arg His Arg Ala Arg Ser Val Arg Ala Arg Leu Leu
132      325      330      335      340
133  Ser Arg Gly Gly Arg Ala Ala Ile Cys Gly Lys Tyr Leu Phe Asn Trp
134      345      350      355      360
135  Ala Val Arg Thr Lys Leu Lys Leu Thr Pro Ile Pro Ala Ala Gly Arg
136      365      370      375      380
137  Leu Asp Leu Ser Gly Trp Phe Thr Ala Gly Tyr Ser Gly Gly Asp Ile
138      385      390      395      400
139  Tyr His Ser Val Ser His Ala Arg Pro Arg Trp Phe Trp Phe Cys Leu
140      405      410      415      420
141  Leu Leu Leu Ala Ala Gly Val Gly Ile Tyr Leu Leu Pro Asn Arg
142      425      430      435      440

```

144 <210> SEQ ID NO: 3

145 <211> LENGTH: 1710

146 <212> TYPE: DNA

147 <213> ORGANISM: Viral

148 <401> SEQUENCE: 3

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150  tcaatgtott attcctggac aggcgcactc gtcaccccggt gcggtgcgga agaacaaaaa      60
151  tggcccatra acgcactgag caactcgttg ctaagccatc acaatctggt gtattccacc      120
152  acctcagga gtgttgcra aaggcagaag aaagtcacat ttgacagact gcaagtrctg      180
153  gacagccatt accaggacgt gctcaaggag gtcaaagcag cggcgtcaaa agtgaaggct      240
154  aacttgatat ccgtagagga agcttgacgc ctgacgcccc cacattcagc caaatccaag      300
155  ttgggtatg gggcaaaaga cgtccgttgc catgccagaa aggcctgtag ccacatcaac      360
156  tccgtgtgga aagaacctct ggaagacagt gtaacaccaa tagacactac catcatggcc      420
157  aagaacgagg tttctcgtt tcagcctgag aaggggggtc gtaagccagc tcgtctcacc      480
158  gtgttccccc acctgggggt gcgcctgtgc gagaagatgg cctgtacga cgtggttagc      540
159  aagctccccc tggcctgtat ggaagctcc tacggattcc aatactcacc aggacagcgg      600
160  gttgaattcc tcgtgcaagc gtggaagtcc aagaagaccc cgtatggggt ctcgtatgat      660
161  acccgctggt ttgactccac agtcaactgag agcgacatcc gtacggagga ggaattttac      720
162  caatgttgtt acctggatcc ccaagccccc gtggccatca agtccctcac tgagaggctt      780
163  tatgttgagg gccctctacc caattcaagg ggggaaaaact gcggctaccg caggtgccgc      840
164  gcagcggcgg tacttaccac tagctgtcgt aacacctca ctgtacat caaggcccgg      900
165  gcagcctgtc gacccgcagg gctccaggac tgcaccatgc tcgtgtgtgg cgacgaacta      960
166  gtcttatctt gtgaaagtgc gggggtccag gaggacggcg cgagcctgag agccttcacg      1020

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```

167 gaggtataga gaaggaacac gggggggggg ggggaggggg gacaaaccaga atacgacttg 1080
168 gaggtatataa gacgatggcgc ccccaacgtg ttagtggggc acgagggggc tggaaagagg 1140
169 gtatatatac ttacacgtga ccccaacacg cccctggcga gaggcgggtg ggagacagca 1200
170 agatatacgc gattcaatgc ctggctaggg aacataatca tgtttggccc cactctgttg 1260
171 tctaggatga taaggatgac ccatctcttt agcgtctcca tagccaggga tcagcttgaa 1320
172 tgggtctta atgggagat ctatggagcc tctactcca tagaaccact ggatctacct 1380
173 ctatctatc aaagattcca tggggcagc gcattttcac tccacagtta ctctccaggt 1440
174 gaaatcaata ggtggggcgc argcttcaga aaacttgggg tccggccctt gcgagcttgg 1500
175 aaacacggg tctggaggtt ccgctatagg ctctcttcca gaggaggcag gctgcccata 1560
176 tctggcaagt acctcttcaa ctgggcagta aaaaacaaag tcaaaactcac tccaatagcg 1620
177 ggggtggggc ggttggactt gtcgggttgg ttcagggtg gctacagcgg gggagacatt 1680
178 tctcacagcg tctctcatgc cggggccggc
181 <211> SEQ ID NO: 4
182 <211> LENGTH: 590
183 <212> TYPE: PRT
184 <213> ORGANISM: Viral
186 <400> SEQUENCE: 4
187 Ser Met Ser Tyr Ser Trp Thr Gly Ala Leu Val Thr Pro Cys Ala Ala
188 1 5 10 15
189 Gln Gln Gln Lys Leu Pro Ile Asn Ala Leu Ser Asn Ser Leu Leu Arg
190 20 25 30
191 His His Asn Leu Val Tyr Ser Thr Thr Ser Arg Ser Ala Cys Gln Arg
192 35 40 45
193 Gln Lys Leu Arg His His Asn Leu Val Tyr Ser Thr Thr Ser Arg Ser
194 50 55 60
195 Ala Cys Gln Arg Gln Lys Lys Val Thr Phe Asp Arg Leu Gln Val Leu
196 65 70 75 80
197 Asp Ser His Tyr Gln Asp Val Leu Lys Glu Val Lys Ala Ala Ala Ser
198 85 90 95
199 Lys Val Lys Ala Asn Leu Leu Ser Val Gln Gln Ala Cys Ser Leu Thr
200 100 105 110
201 Pro Pro His Ser Ala Lys Ser Lys Phe Gly Tyr Gly Ala Lys Asp Val
202 115 120 125
203 Arg Cys His Ala Arg Lys Ala Val Ala His Ile Asn Ser Val Trp Lys
204 130 135 140
205 Asp Leu Leu Gln Asp Ser Val Thr Pro Ile Asp Thr Thr Ile Met Ala
206 145 150 155 160
207 Lys Asn Glu Val Phe Cys Val Gln Pro Glu Lys Gly Gly Arg Lys Pro
208 165 170 175
209 Ala Arg Leu Ile Val Phe Pro Asp Leu Gly Val Arg Val Cys Glu Lys
210 180 185 190
211 Met Ala Leu Tyr Asp Val Val Ser Lys Leu Pro Leu Ala Val Met Gly
212 195 200 205
213 Ser Ser Tyr Gly Phe Gln Tyr Ser Pro Gly Gln Arg Val Glu Phe Leu
214 210 215 220
215 Val Gln Ala Trp Lys Ser Lys Lys Thr Pro Met Gly Phe Ser Tyr Asp
216 225 230 235 240
217 Thr Arg Cys Phe Asp Ser Thr Val Thr Glu Ser Asp Ile Arg Thr Glu
218 245 250 255

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```

117 Ala Ala Ile Tyr Gln Cys Cys Asp Leu Asp Pro Gln Ala Arg Val Ala
118      180      365      370
119 Ile Lys Ser Leu Thr Ala Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn
120      175      360      385
121 Ser Arg Gly Gln Asn Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val
122      191      395      390
123 Leu Thr Thr Ser Cys Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala Arg
124      305      410      315      320
125 Ala Ala Cys Arg Ala Ala Gly Leu Gln Asp Cys Thr Met Leu Val Cys
126      425      330      335
127 Gly Asp Asp Leu Val Val Ile Cys Glu Ser Ala Gly Val Gln Glu Asp
128      340      345      350
129 Ala Ala Ser Leu Arg Ala Phe Thr Glu Ala Met Thr Arg Tyr Ser Ala
130      355      360      365
131 Pro Pro Gly Asp Pro Pro Gln Pro Glu Tyr Asp Leu Glu Leu Ile Thr
132      370      375      380
133 Ser Cys Ser Ser Asn Val Ser Val Ala His Asp Gly Ala Gly Lys Arg
134      385      390      395      400
135 Val Tyr Tyr Leu Thr Arg Asp Pro Thr Thr Pro Leu Ala Arg Ala Ala
136      405      410      415
137 Trp Glu Thr Ala Arg His Thr Pro Val Asn Ser Trp Leu Gly Asn Ile
138      420      425      430
139 Ile Met Phe Ala Pro Thr Leu Trp Ala Arg Met Ile Leu Met Thr His
140      435      440      445
141 Phe Phe Ser Val Leu Ile Ala Arg Asp Gln Leu Glu Gln Ala Leu Asn
142      450      455      460
143 Cys Glu Ile Tyr Gly Ala Cys Tyr Ser Ile Glu Pro Leu Asp Leu Pro
144      465      470      475      480
145 Pro Ile Ile Gln Arg Leu His Gly Leu Ser Ala Phe Ser Leu His Ser
146      485      490      495
147 Tyr Ser Pro Gly Glu Ile Asn Arg Val Ala Ala Cys Leu Arg Lys Leu
148      500      505      510
149 Gly Val Pro Pro Leu Arg Ala Trp Arg His Arg Ala Arg Ser Val Arg
150      515      520      525
151 Ala Arg Leu Leu Ser Arg Gly Gly Arg Ala Ala Ile Cys Gly Lys Tyr
152      530      535      540
153 Leu Phe Asn Trp Ala Val Arg Thr Lys Leu Lys Leu Thr Pro Ile Ala
154      545      550      555      560
155 Ala Ala Gly Arg Leu Asp Leu Ser Gly Trp Phe Thr Ala Gly Tyr Ser
156      565      570      575
157 Gly Gly Asp Ile Tyr His Ser Val Ser His Ala Arg Pro Arg
158      580      585      590
159 <210> SEQ ID NO: 3
160 <311> LENGTH: 49
161 <212> TYPE: PRI
162 <213> ORGANISM: Viral
163 <400> SEQUENCE: 5
164 Arg Leu Leu Asp Leu Ser Ser Trp Phe Thr Val Ser Ala Gly Gly Gly
165 1 10 15

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